CHADWICK (JAS. R.)

Report on Obstetrics and diseases of women.

REPORT ON OBSTETRICS AND DISEASES OF WOMEN.

By James R. Chadwick, M.D.

Obstetrics.

Des Indications de l'Hydrate de Chloral dans l'Accouchement. Par le Dr. A. Pellisier. Paris. 1873.

The author concludes, from his experiments and from the facts he adduces, that chloral hydrate, in the first place, exerts no prejudicial effect upon the health of the mother or child, and, secondly, that it produces sleep and a diminution of the pain without interfering with the regular uterine contractions. It appears to be particularly useful for the purpose of allaying the excitement caused by the pain in nervous, irritable women, who are dreading the pangs of childbirth. Its action is not to remove all perception of the pains, but merely to deaden, in a measure, the sense of feeling. The woman remains conscious that she is having a uterine contraction, but is not distracted by the intensity of her suffering; she is consequently ready to aid it by means of the abdominal muscles. Dr. Lambert, of the Edinburgh Lying-in Hospital, goes so far as to assert that the energy of the uterus is absolutely augmented by chloral, so that the contractions become less frequent, shorter and more powerful.

Sudden Death from Syncope soon after Labor.—Dr. J. J. Philips (*Guy's Hospital Reports*, xviii. 3) takes up the subject of cardiac syncope, passing by the sudden deaths in childbed that are due to embolism, the entrance of air into the veins, shock from uterine lesion and hæmorrhage. The patients generally have a natural labor, but, a short time after delivery, are seized with a faintness, subsequent to some slight effort, such as rising in bed; from this they never recover. The women in whom it occurs are commonly multiparæ, pale, in poor health, and with a history of some antecedent shortness of breath. The microscope has always shown well-marked fatty degeneration of the muscular tissue of the heart. This change can only be regarded, however, as an exaggeration of the physical processes which naturally take place in the body. Sudden death after delivery differs in a measure from that occurring during labor, though both may be attributable to weakness of the heart. In the latter category of cases, the right side of the heart is presumed to be choked by the accumulation of blood in it, owing to the difficulty of its transmission through the lungs during a labor pain, while the heart is embarrassed by the act of straining—hence failure of the heart. So, in valvular disease, death may supervene in the middle of labor, when the volume of blood is augmented by its expulsion from the uterus during contractions, and thus the heart become overburdened. Dr. Thompson believes that, in cases where the circulation is weak, ergot must be prescribed with the greatest circumspection, on account of its depressing influence on the heart. Dr. Philips, in conclusion, cites

four cases of fatal and two of non-fatal syncope, which have come under his observation. Ergot was administered to two of these patients. Such cases indicate the necessity of insisting upon a strict maintenance of the recumbent posture for some time after delivery, and the application of an abdominal binder, to compensate, in a measure, for the sudden removal of pressure to which the viscera and large vessels have been subject for a number of weeks.

Transfusion.—This means of reviving exsanguinated patients has been brought into notice in England by a successful case, which was reported to the Obstetrical Society of London by Dr. J. H. Aveling. It is to obstetricians that this subject is of chief interest and importance, for, although it is available in every form of dangerous bleeding, yet it will unquestionably be resorted to in uterine hæmorrhage more than in any other emergency. Its employment, in cases where the quality of the blood is altered, is still of dubious utility. The immediate effect of injecting blood into the veins is varied; in some instances, "patients have started up, as if from a long sleep, moved their limbs, and even asked for food; others, even of those who have eventually recovered, have only slowly shown signs of returning life. In general, the pulse soon becomes stronger, the respiration more regular, and the skin warmer. If the favorable symptoms are not maintained, the operation should be repeated, because their appearance shows that the system is capable of responding to the means employed."—(Dr. H. M. Madge, in *British Medical Journal*, Jan. 10, 1874.)

The principal forms of transfusion are four:—

1. Transfusion with defibrinated blood.
2. Mediate transfusion with pure blood.
3. Immediate transfusion from vein to vein.
4. Immediate transfusion from artery to vein.

1. Transfusion with defibrinated blood has thus far been the method most in vogue, its chief advocate being Dr. Robert McDonnell, of Dublin. He regards defibrination as an essential condition, because of the rapid coagulation of pure blood and the consequent liability to the formation of small emboli, to which he attributes all the deaths that have occurred a few days after the operation. Fibrine is also, according to some of the recent, though not universally accepted, views of physiologists, an excrementitious element, as shown by its "absence from the blood which has passed through the great depurating organs of the body."—(*Obstetrical Journal of Great Britain*, i. 8.) The oxygen contained in the red corpuscles is the true revivifying agent, and defibrinated blood, consequently, has the elements necessary for temporary stimulus. It is, therefore, physiologically better and surgically safer than pure blood. Dr. McDonnell has operated in several cases, of which three or four have been successful. His procedure is to catch the blood in a basin, whip it with a stick, or better still on the grounds of cleanliness, with a glass rod. In two or three minutes, the fibrine is found adhering to the rod, when the blood must be strained several times through fine linen. It is then ready for use, and is placed in a glass cylinder, capable of holding six ounces, shaped like a syringe, but devoid of a piston; to the nozzle is affixed a long rubber tube, with a canula at its extremity for insertion in the vein. The blood is driven into the vein by gravitation, aided by a small propelling bulb in the middle of the tube, and the occasional

gentle blowing of the operator, with his mouth applied to the open top of the cylinder. The apparatus is spoken of as comprising every possible requirement in a small compass.

2. Mediate transfusion with pure blood has been performed by Mr. Higginson, of Liverpool, in fifteen cases, of which ten were successful. His instrument resembles a syringe, but is bulky, owing to the precautions taken to keep the blood and the instrument warm, and to prevent the entrance of air into the vein. These contrivances would seem superfluous, in view of the recent discovery that heat promotes coagulation, and cold retards it. The entrance of air into the veins is, moreover, not now regarded with the same apprehension as of old, for Oré has shown that, although a large quantity of air, forced into the femoral vein of a dog, will cause death in a few minutes, a small quantity may be introduced with impunity (*Etudes sur la Transfusion du Sang*. Paris, 1868).

3. Immediate transfusion from vein to vein has been revived and perfected by Dr. Aveling (*Obstetrical Journal of Great Britain* i. 5 and 6), whose instrument, as he very justly remarks, forms an anastomosis between the circulatory systems of the two individuals (they become Siamese twins for the time being). It consists of a rubber tube, about a foot long, with a bulb at the centre. Two canulæ are inserted into one of the larger brachial veins of the patient and of the blood-donor respectively—the former being directed toward the heart to discharge the blood, and the latter toward the periphery so as to receive it. There are no valves to the central pump, for fear they might become centres for the formation of fibrinous clots; as a substitute for them, the finger and thumb of the left hand are made to compress the tube on one or the other side of the bulb, according as the bulb is expected to forward its contents toward the patient, or to refill itself from the veins of the donor. Before being affixed to the canula, the tube is filled with warm water, so that the first syringefull injected is pure water; this has not proved deleterious. This process is repeated as often as is thought desirable, the amount of blood transfused being gauged by the number of times the pump is emptied, its capacity being two drachms. This procedure of Dr. Aveling's has been seven times successfully applied in England, and it certainly offers more advantages than any of the others. These advantages are thus stated by the author:—

a. The exact quantity of blood required is taken from the donor, and no more.

b. No delay is caused by previous complicated manipulations of the blood, it being allowed to pass from vein to vein physiologically unchanged.

c. The chances of coagulation are small, because the blood is removed from the action of the living vessel for only a few seconds, and glides smoothly through the India-rubber tube, without being exposed to the air.

d. The apparatus is effective, simple, portable, inexpensive, and not likely to get out of order.

e. The operation is safe, uninterrupted, and a close imitation of nature.

4. Immediate transfusion from artery to vein is the oldest form, and was not, at the outset, very difficult, as the early operations were

confined to animals. The direct transfusion of a lamb's blood into veins of human beings is illustrated by cases reported by Dr. Oscar Hasse, in the *Allgemeine Weiner Medizinische Zeitung* for December, 1873 (*London Medical Record*, Dec. 31, 1873), where the patients were suffering from phthisis, chlorosis, dysentery, &c., all of whom received benefit. The blood of the lamb is preferable to that of other animals, because its corpuscles most nearly resemble in size those of man. No one has yet been bold enough to recommend, or practise, the opening of an important human artery for the purpose of arterial transfusion.

The *modus operandi* of transfusion is not understood, though there is a belief, generally prevalent, that the blood injected goes directly to the heart, which is aroused to increased action by the presence of its natural stimulus. Hüter, however, seems to have satisfactorily demonstrated that the blood does not go directly to the heart, but is diffused in the general venous system. The whole subject needs investigation, and, if its employment continues to yield as good results as it promises to do, experimenters will be amply repaid for all the time and labor which they may bestow upon it.

Action of Ergot on the Bladder.—Dr. Wernich (*Centralblatt für die Medicinischen Wissenschaften*) expresses the opinion that the fulness of the bladder, after the administration of this drug, is due, not only to retention of the normal amount of urine, owing to the irritant action exerted upon the sphincter vesicæ by the preparations of ergot, but also to an increase in the amount of that fluid secreted. The practical bearing of this view is, that the bladder must be repeatedly emptied after ergot has been given, whether during or subsequent to labor.

Injection of Perchloride of Iron in Post-partum Hæmorrhage.—On February 5, 1873, Dr. H. Smith (*Obstetrical Journal of Great Britain*, i., 1) reported a case to the Obstetrical Society of London, in which he had resorted to this treatment to check a persistent secondary hæmorrhage. He began with a solution of one part of liquor ferri perchloridi fortior to eight parts of water, and increased the strength on the following days, until the twenty-first, when he injected two drachms of the pure liquor. This arrested the bleeding, but gave rise to immediate acute pain. On the twenty-fifth day, the patient was delirious, and had a brown, offensive discharge; on the twenty-eighth day, she died. At the autopsy, the source of the hæmorrhage was found to be an artery, which hung out more than an eighth of an inch from the uterine wall, near a small mass of placenta. The author's deductions are:—

1. That post-partum hæmorrhage, after complete contraction of the uterus, and, therefore, after the uterine sinuses have been emptied of blood, is arterial.

2. That when a solution of the perchloride of iron is injected into the uterus, the sinuses take it up and carry it into the veins, the surrounding tissues becoming stained.

3. That the perchloride of iron does not produce contraction, nor, by coagulation of blood, blocking of the orifices of the uterine arteries.

4. That the application of this styptic to the cavity of the puerperal uterus is not innocuous.

At a subsequent meeting, Dr. Snow Beck, who had never used such injections, but knew of some fatal cases in the practice of his friends, labored to show that, owing to the comparative isolation of the uterus from the general system, remedies, applied to induce contraction of the gravid uterus, do not act through the medium of the cerebro-spinal nervous system (reflex action), but that ice, kneading the organ, &c., are almost entirely local stimulants of the uterine tissues; that the arrest of uterine hæmorrhage does not in any way depend upon the formation of coagula in the canals of the bloodvessels, and that, in consequence of these facts, the injection of the perchloride of iron is not only utterly futile, but also dangerous, from its liability to cause septicæmia and death. To these *à priori* arguments, Dr. Barnes replied by denying the truth of Dr. Beck's facts; he asserted that the injection of iron into the uterus did unmistakably evoke reflex action, and that it also coagulated the blood, and corrugated the internal surface of the uterus, by all of which methods the flow of blood is checked. He based his views upon practical experience at the bed-side, where he had often arrested post-partum hæmorrhage by iron injections, when every other means had failed. Many successful and a few fatal cases were reported by a number of the gentlemen present. Dr. Smith closed the discussion by stating that the lesson he had tried to deduce was that, though the intra-uterine injection of iron might be a suitable remedy in cases of primary hæmorrhage, it was not so in secondary.

In the next number of the same journal (vol. 1., No. 2), Dr. Playfair gives a very interesting account of a case, in which he considers that, although the patient had septicæmia and barely escaped with her life, she would certainly have died during labor, if he had not employed this styptic. He emphasizes the importance of washing out the hardened coagula caused by the iron, before they decompose and are absorbed.

Dr. A. B. Steele *(Ibid.* i. 3) testifies to the happy action of these injections in some of his patients. He is disposed to think that the iron does not act as a direct styptic, but, rather, as a "reflex-excitor of the incident nerves of the walls of the uterus." He puts the question very strongly, whether we shall allow the patient to bleed to death before our eyes, rather than employ means that will certainly save her, but may subject her to a possible future risk. He lays stress upon the importance of removing all coagula or retained portions of the placenta before injecting the fluid.

Dr. T. E. Williams claims *(Ibid.* i. 9) to have had seven cases, in which he is satisfied that the use of perchloride of iron was the means of saving life. In one of these, the arrest of the hæmorrhage was clearly attributable to the uterine contractions, excited by the injection, while in another it was quite as evidently due to the hæmostatic and styptic properties of the iron, for the uterus remained soft and relaxed, though the bleeding ceased.

As the matter now stands, the injection of a strong solution of liquor ferri perchloridi fortior into the uterine cavity seems to be not only justifiable in primary post-partum hæmorrhage, but to be, in reality, the only means we possess of checking the flow where ergot, kneading the uterus externally, and the introduction of cold water, ice, or the operator's hand into the uterine cavity, prove ineffectual.

DISEASES OF WOMEN.

Sex in Education. By EDWARD H. CLARKE, M.D. Boston, 1873.

This brilliant essay aims at pointing out some of the errors in our system of educating girls, errors which are fraught with evils so serious as to endanger, not only the present health of our women, but also the whole future of our nation. So grave a charge being thus brought against our schools and homes, it behooves us to scan narrowly the facts and line of argument upon which the author bases his views.

To be fair to the book, we must, in the first place, bear in mind that it is not addressed to scientific circles, who would have a right to demand an array of facts and statistics before yielding assent to the propositions set forth, but to the public, who can understand the physiological laws adduced in support of the position taken, and follow the train of argument, but who would be utterly incompetent to estimate the value of any clinical experience, which might be introduced. The book is, therefore, an exposition of the author's personal opinions, and is deserving of acceptance just so far as we have faith in the correctness of his knowledge and of his deductions. As a key to these, we have the physiological laws and typical cases that are scattered through the volume.

In the introductory chapter, the perfect equality of man and woman is insisted upon, but it is not meant that the sexes are identically the same. They differ greatly, not in the extent or amount of their power, but in the direction in which it lies. They are so nearly alike in some matters that they can interchange labor without perceptible difference; in others, a change cannot be effected without a loss in the amount or quality of the work accomplished. As an illustration of this, it is evident that "a girl can hold a plough and ply the needle after a fashion. If she can do both better than a man, she ought to be both farmer and mistress; but if, on the whole, her husband can hold best the plough and she ply best the needle, they should divide the labor."

With these preliminary points settled, Dr. Clarke next defines his use of the term education as not being in the limited and technical sense of intellectual and mental training alone, but as including, what its etymology indicates, the drawing out and development of every part of the system, comprising the whole manner of life, physical and psychical, during the educational period. Again, on page 24, he says that "the object of this paper is to call attention to the errors of physical training that have crept into, and twined themselves about, our ways of educating girls, both in public and private schools."

From these two statements, we are naturally led to expect that the book aims chiefly at demonstrating how erroneous and disastrous are the regulations prescribed by the schools for the preservation of the physical strength of our girls. It is, consequently, with some little surprise that, as we turn page after page, the conviction is forced upon us that the author has penned this philippic to show the errors in the mental discipline far more than those affecting the physical training of the scholars. The influence of "home-life and social-life" is not discussed, and hardly has a mention in the essay; this statement is made in the face of Dr. Clarke's protest in the note to the Fifth Edition, where he claims that his invectives are aimed at the errors which are sanctioned by them as much as by school-life. The testimony of the book itself is against him. In corroboration of this view,

we need only to point at the typical cases cited in a subsequent chapter. Case I. is attributed, chiefly, to brain-work, and secondarily to muscular exercise necessitated by the school regulations; Case II., to muscular and brain work equally; Case III., to muscular exercise; Case IV., to brain-work; Case V., to brain-work; Case VI., apparently, to brain-work; Case VII., to "intellectual labor." The true aim of the paper seems to be to demonstrate that, during the first few years of puberty, a girl's mind cannot be cultivated persistently without entailing serious injury upon her reproductive system, and, secondarily, upon her general health. This fact our schools utterly ignore, and thus disseminate poor health and disease throughout the community.

The reason for a discrimination is, then, attributed to the monthly demands upon the female organism by the functional activity of the reproductive apparatus. These are peculiarly severe and trying during the first few years after the establishment of the catamenia, and this period, falling, as it does, between the ages of 14 and 18 years, unfortunately coincides with the period when the girl is making the greatest efforts to cultivate and train her mind by work at school. Yet, with precautions and limitations, this double demand for the development of the brain and of the sexual organs might be met without detriment to the health of the individual. Most of our girls, between the ages of 14 and 18, study five hours in school, and two or three hours at home every day; this, Dr. Clarke considers should be reduced to five hours a day, with a remission of one to three days every month. It is the educational methods of our school and colleges for girls which are, to a great extent, the cause of the many ills that beset American women, but they are not the sole cause. "We live in the zone of perpetual pie and doughnut, and our girls revel in those inassimilable abominations. Much, also, may be credited to artificial deformities, strapped to the spine or piled on the head, much to corsets and skirts, as much to omission of clothing where it is needed, as to excess where the body does not require it."

In the "Chapter chiefly Physiological," a tri-partite life is assigned to woman, the first period of which extends from birth to about the age of 12 or 15 years; the second from the end of the first to about the age of 45; and the third, from that time to the completion of life. The critical years are those of passage from one period to the next, and it is the earlier of these which we are now discussing. The organs peculiar to the female sex then enter upon a condition of functional activity. Nature has reserved one week in the month for the process of ovulation and for the development and perfection of the sexual apparatus. The system never does two things well at the same time; the muscles and the brain will not perform their functions, in their best way, at the same time; consequently, muscular work and brain work must be periodically remitted up to the age of 18 or 20 years, if we expect the reproductive system to do its task properly.

Both sexes alike possess certain organs of elimination, such as the bowels, kidneys, lungs and skin; but to woman alone, he claims, is entrusted the exclusive management of another process of elimination, namely, the catamenial function. "The reproductive apparatus of woman uses the blood as one of its agents of elimination. Kept within natural limits, this elimination is a source of strength. . . . . Beyond

these limits, it is a hæmorrhage that, by draining away the life, becomes a source of weakness, and a perpetual fountain of disease." An imperfect performance of the functions, "by closing an avenue of elimination, poisons the blood, and depraves the organization." These quotations, as well as other passages (pp. 92, 96, &c.), show that the author still adheres to the old doctrines, which taught that an excrementitious element was expelled from the system in the menstrual discharge (analogous to urea in the urine), whereas modern physiologists and chemists have demonstrated conclusively that this discharge consists only of venous blood, with the admixture of uterine and vaginal mucus and a few epithelial cells (Krieger. Die Menstruation. Berlin, 1869. p. 102). This, too, is in accordance with recent microscopical researches (Kundrat and Engelmann, in *Stricker's Jahrbücher*, II. Heft, 1873), which have shown that the blood is simply extravasated into the cavity of the uterus, owing to a fatty degeneration which takes place in the walls of the capillaries distributed in the menstrual decidua. An arrest of the monthly flow is now generally regarded either as a symptom of anæmia, when it is really a conservative act of nature, or as due to some derangement of function, when it results not in a poisoning of the blood, but in the retention of an excessive amount of blood in the system, giving rise to a condition of congestion, both local and general, with its characteristic symptoms. A dissent from Dr. Clarke's physiology on this point does not, however, involve a disbelief in the harm likely to arise from any disturbance of menstruation.

Another statement which is hard to accept, in view of the contrary opinions expressed by the majority of authorities in this branch of medicine, is that which explains the occurrence of menorrhagia in school girls, by supposing a determination of blood toward the brain owing to its activity, and a consequent anæmic state of the pelvic organs, whereby "there is not nervous power enough developed in the uterine and associated ganglia to restrain the laboring orifices of the circulation." This cause of menorrhagia is overlooked by Duncan, Thomas, West, Barnes, and other gynæcologists; in fact, they all mention congestion of the pelvic organs as the chief source of excessive menstruation. It is to be remarked that from the preface we learn that "the subject is treated solely from the standpoint of physiology."

In the chapter on "Co-education," the common signification of the term is adopted, which "includes time, place, government, methods, studies and regimen. Age and proficiency, but not sex, is admitted as a factor in classification. Physiology protests against this, and this is the characteristic of the American school system. . . . Schools have been arranged to meet the requirements of the masculine organization. Girls' schools are modelled on boys' schools." This peculiarity of our schools is the butt of the whole book. If schools can only be arranged, argues Dr. Clarke, so as to recognize the periodicity of the feminine organization, our women would have a fair chance of escaping the shoals toward which they are now steering. No suitable plan has yet been devised for meeting this necessity in mixed schools. Identical co-education is, consequently, a sharpened stake on which our nation is about to impale itself.

The concluding chapter endeavors to show that the European way

of educating girls differs from our way in the essential points at issue. Two letters, from a German gentleman and lady, respectively, are introduced; their testimony is meagre and conflicting. Yet one point is of interest and importance, if true, namely, that German girls seldom attend school after 15 years of age, but pursue their studies at home; they are thereby able to take the needful relaxation once a month. On the other hand, it is explicitly stated that German girls make no change, provided the function is normally performed. Social restrictions are, however, imposed upon them by their parents, for it is mentioned that they are not allowed to ride, nor do they go to parties or dances. It is evident that the health-insuring regimen observed among our Teutonic friends emanates more from the home than from the school.

We are all immensely indebted to Dr. Clarke for tearing off the conventional fig-leaf which has hitherto prevented the public from discerning clearly that peculiarity of physical organization in woman which has stood in the way of her adopting the garb and habits of a man.

The book is not convincing—perhaps, owing to the reasons given in the first part of this abstract—but it has certainly done good service in opening up for discussion a subject well worthy of long, patient, and above all unprejudiced, investigation; having succeeded in this, the author will—to use his own words—be amply repaid for the time and labor of its preparation.

Colotomy.—In the *British Medical Journal* of November 15, 1873, Mr. Christopher Heath reports eleven cases of colotomy, all in women; three operations were for cancer of the rectum causing obstruction; three were for cancer before obstruction had occurred; three were for syphilitic ulcer and stricture; one was for fistulæ and ulceration (probably syphilitic), and one was for relief of a recto-vaginal fistula. The results were four deaths and seven recoveries. Several of the patients were greatly exhausted before they came under his care, but the author claims that the operation, if it can be performed in good season, may be regarded as a fairly successful one, and that the immediate risk is small. The operation is not difficult in the majority of cases, and even if the peritoneum is opened—which is not always avoidable—it is not necessarily fatal. Colotomy is distinctly curative in syphilitic ulceration of the rectum, and relieves the suffering, as well as prolongs the life, in cancerous disease, by preventing the occurrence of obstruction.

"*De nonnullis Sterilitatis Causis.*"—Under this ponderous title, Dr. Noel Gueneau de Mussy (*L'Union Médicale*, Dec. 4, 1873) publishes, in the Latin tongue, a paper, in which he points out what he conceives to be some of the moral causes of sterility. His reason for adopting a dead language, in which to clothe his ideas, was the desire to give his work "a more serious and exclusively scientific character," as well as "to cover certain crudities of expression, which the French language would not sanction." Now this inordinate affection for science and coyness about expressing indecent ideas would be very refreshing to see revived in the contemporaneous literature, dramas, journals, &c., of France, but its adoption for the pages of a journal addressed exclusively to scientific and professional circles savors much more of a desire for notoriety, than of an innate modesty on the part of its author. If a man's conceptions are too nasty to express

in French, the civilized world should unite in protesting against his pollution of another language, and particularly a dead one, by making it the vehicle of his thought. As it happens, however, the ideas are neither altogether new, nor so very shocking.